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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PE, GEEPY

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,929	Applicant(s) GOMILA, CRISTINA	
	Examiner Geepy Pe	Art Unit 2485	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/26/10 has been entered.

Response to Arguments

2. Applicant's arguments filed 7/26/10, with respect to claims 1-23, have been fully considered but they are not persuasive.

3. Claim 1 remains rejected under 35 U.S.C. 102(b) as being anticipated by Chien at al. (U.S. Pat. 5,621,467; hereinafter Chien; already of record).

4. Claims 2-23 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Chien, in view of Richardson (Richardson, "H.264/MPEG-4 Part 10: Intra Prediction").

5. The Applicant(s) present(s) three (3) substantive argument(s) contending the Examiner's rejection(s) of claim(s) 1 under 35 U.S.C. 102(b) as being anticipated by Chien and claim(s) 2-23 under 35 U.S.C. 103(a) as being unpatentable over Chien, in view of Richardson, as was set forth in the Office Action of 6/8/10. However, after carefully reviewing the argument(s) presented and further scrutiny of the applied reference(s), the Examiner must respectfully disagree and maintain the grounds of rejections for the reasons that follow.

The Applicant first argues that Chien does not "...teach or suggest anything with respect to using a 'coding mode' for concealing error in an image..." (Remarks/Arguments of 7/26/10: pg. 9, lines 1-6). The Examiner respectfully disagrees. Chien teaches that Fig. 1 of Chien shows the image areas forming the basis of block based compression (Chien: col. 1, lines 30-32) along with MPEG compression (Chien: col. 7, lines 50-55). That is, because a compression basis is formed, an intra-prediction coding mode can be derived, with the different concealment modes for compression of macroblocks. With this, an interpolation filter for the identified intra-prediction coding mode can be established.

Next, the Applicant argues that "...nothing in either of the cited references teaches or suggests applying the ISO/ITU H.264 coding techniques to conceal errors in a coded image..." (Remarks/Arguments of 7/26/10: pg. 10, lines 6-10) and that the combination of references constitutes an exercise of impermissible hindsight (Remarks/Arguments of 7/26/10: pg. 10, lines 17-18). The Examiner respectfully disagrees. Richardson explicitly teaches the H.264 coding standard, which uses prediction to encode the block or macroblock in intra mode (Richardson: pg. 1 of 1, section 1, first and second paragraphs). Accordingly, Richardson teaches the H.264 CODEC for compression/coding, using prediction analysis for error concealment to code a block or macroblock in intra mode.

Lastly, the Applicant argues that the combination of Chien and Richardson do not teach the limitation of claims 4 and 16; specifically "...an interpolation filter mirroring the interpolation filter..." (Remarks/Arguments of 7/26/10: pg. 11, lines 17-20). That is, "...a 'mirrored' interpolation filter may select an alternate set of reference pixels for concealment purposes if the reference pixels typically chosen for concealment purposes includes missing or

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corrupt values...” (Remarks/Arguments of 7/26/10: pg. 12, lines 4-6). The Examiner respectfully disagrees. Chien discloses using the block vertically above the lost block to determine predicted values (Chien: col. 3, line 66 - col. 4, line 2). Chien alternatively uses a prior frame collocated with the missing block (Chien: col. 4, lines 2-4). With the Applicant’s description of a “mirrored” interpolation filter, an alternative set of reference pixels for concealment has been chosen.

Accordingly, the Examiner maintains the applicability of the references cited and maintains the grounds of rejection previously presented. A recitation, with the amendments presented, of the rejections follow below.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Chien.

Re. **claim 1**, Chien teaches a method for concealing errors in a coded image formed of an array of macroblocks (Chien: Title; Abstract), comprising the steps of: identifying macroblocks within the array having missing/corrupted pixel values (Chien: col. 2, lines 54-55, 65-67; col. 4, lines 35-40); for each identified macroblock, deriving at least one intra-prediction coding mode for obtaining coding prediction values to define a concealment direction, the at least one intra-prediction coding mode derived in accordance with the coded image (Chien: col. 4, lines 35-51;

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col. 1, lines 30-32; col. 1, lines 50-55); establishing an interpolation filter for the identified intra-prediction coding mode for estimating concealment values for each identified macroblock along the concealment direction (Chien: col. 4, lines 35-51; col. 1, lines 30-32); and concealing the identified macroblock in accordance with the estimated concealment values (Chien: col. 4, lines 35-51).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims **2-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien, in view of Richardson.

Re. **claim 2**, Chien does not explicitly teach that the image is coded in accordance with the H.264 coding technique and wherein the step of deriving the at least one intra-prediction mode further comprises the step of deriving an Intra_4x4 prediction mode prescribed by the

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H.264 coding technique. However, in the same field of endeavor, Richardson teaches different modes of intra-prediction and choosing one according to the H.264 standard (Richardson: pg. 1 of 1, section 2) for the benefit of minimizing the residual between a sample and the block to be encoded (Richardson: pg. 1 of 1, section 2, last sentence). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the image is coded in accordance with the H.264 coding technique and wherein the step of deriving the at least one intra-prediction mode further comprises the step of deriving an Intra_4x4 prediction mode prescribed by the H.264 coding technique in the Chien invention, as shown in Richardson, for the benefit of minimizing the residual between a sample and the block to be encoded. The Chien invention, now incorporating the Richardson invention, has all the limitations of claim 2.

Re. **claim 3**, Chien, now incorporating Richardson, teaches that the step of establishing the interpolation filter further comprises selecting the interpolation filter prescribed by the H.264 coding technique for the derived Intra_4x4 prediction mode (Chien: Fig. 3; Richardson: pg. 1 of 1, section 2).

Re. **claim 4**, Chien, now incorporating Richardson, teaches that the step of establishing the interpolation filter further comprises the step of deriving a interpolation filter mirroring the interpolation filter prescribed by the H.264 coding technique for the derived Intra_4x4 prediction mode (Chien: Fig. 5 & Richardson: pg. 1 of 1, section 2; Fig. 2-2).

Re. **claim 5**, Chien, now incorporating Richardson, teaches that the derived Intra_4x4 prediction mode comprises Mode 0 (vertical) and wherein the derived interpolation filter comprises the interpolation filter prescribed by the H.264 coding technique for Mode 0 (Richardson: pg. 1 of 1, section 2; Fig. 2-2).

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Re. **claim 6**, Chien, now incorporating Richardson, teaches that the derived Intra_4x4 prediction mode comprises Mode 1 (horizontal) and wherein the derived interpolation filter comprises the interpolation filter prescribed by the H.264 coding technique for Mode 1 (Richardson: pg. 1 of 1, section 2; Fig. 2-2).

Re. **claim 7**, Chien, now incorporating Richardson, teaches that the derived Intra_4x4 prediction mode comprises Mode 2 (DC) and wherein the step of establishing the interpolation filter further comprises the step independently weighting a sum of pixel values from a neighboring column and a neighboring row in a vertical direction and a horizontal direction, respectively (Richardson: pg. 1 of 1, section 2; Fig. 2-2).

Re. **claim 8**, Chien, now incorporating Richardson, teaches that the derived Intra_4x4 prediction mode comprises Mode 3 (Diagonal down left) and wherein the derived interpolation filter comprises the interpolation filter prescribed by the H.264 coding technique for Mode 3 (Richardson: pg. 1 of 1, section 2; Fig. 2-2).

Re. **claim 9**, Chien, now incorporating Richardson, teaches that the derived Intra_4x4 prediction mode comprises Mode 7 (vertical left) and wherein the derived interpolation filter comprises the interpolation filter prescribed by the H.264 coding technique for Mode 7 (Richardson: pg. 1 of 1, section 2; Fig. 2-2).

Re. **claim 10**, Chien, now incorporating Richardson, teaches that the derived Intra_4x4 prediction mode comprises Mode 4 (diagonal down right) and wherein the derived interpolation filter comprises the interpolation filter prescribed by the H.264 coding technique for Mode 4 (Richardson: pg. 1 of 1, section 2; Fig. 2-2).

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Re. **claim 11**, Chien, now incorporating Richardson, teaches that the derived Intra_4x4 prediction mode comprises Mode 5 (Vertical right) and wherein the derived interpolation filter comprises the interpolation filter prescribed by the H.264 coding technique for Mode 5 (Richardson: pg. 1 of 1, section 2; Fig. 2-2).

Re. **claim 12**, Chien, now incorporating Richardson, teaches that the derived Intra_4x4 prediction mode comprises Mode 6 (horizontal down) and wherein the derived interpolation filter comprises the interpolation filter prescribed by the H.264 coding technique for Mode 6 (Richardson: pg. 1 of 1, section 2; Fig. 2-2).

Re. **claim 13**, Chien, now incorporating Richardson, teaches that the derived Intra_4x4 prediction mode comprises Mode 8 (horizontal up) and wherein the derived interpolation filter comprises the interpolation filter prescribed by the H.264 coding technique for Mode 8 (Richardson: pg. 1 of 1, section 2; Fig. 2-2).

Re. **claim 14**, the claim(s) recites analogous limitations to claim(s) 1 and 2 above, and is/are therefore rejected on the same premise.

Re. **claim 15**, the claim(s) recites analogous limitations to claim(s) 3 above, and is/are therefore rejected on the same premise.

Re. **claim 16**, the claim(s) recites analogous limitations to claim(s) 4 above, and is/are therefore rejected on the same premise.

Re. **claim 17**, the claim(s) recites analogous limitations to claim(s) 6 above, and is/are therefore rejected on the same premise.

Re. **claim 18**, the claim(s) recites analogous limitations to claim(s) 8 above, and is/are therefore rejected on the same premise.

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Re. **claim 19**, the claim(s) recites analogous limitations to claim(s) 9 above, and is/are therefore rejected on the same premise.

Re. **claim 20**, the claim(s) recites analogous limitations to claim(s) 10 above, and is/are therefore rejected on the same premise.

Re. **claim 21**, the claim(s) recites analogous limitations to claim(s) 11 above, and is/are therefore rejected on the same premise.

Re. **claim 22**, the claim(s) recites analogous limitations to claim(s) 12 above, and is/are therefore rejected on the same premise.

Re. **claim 23**, the claim(s) recites analogous limitations to claim(s) 13 above, and is/are therefore rejected on the same premise.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geepy Pe whose telephone number is (571)-270-3703. The examiner can normally be reached on Monday - Friday, 7:00AM - 3:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Geepy Pe/
Examiner, Art Unit 2485

/Jayanti K. Patel/
Supervisory Patent Examiner, Art Unit 2485
May 3, 2011